Listing of Claims:

1. - 16. (Canceled)

17. (Currently Amended) A non-invasive method for producing a local temperature increase within a body of material using focused sound signals in a target region, wherein the target region comprises a volume situated proximate to the focus of the focused sound signals, said method comprising:

generating a sound signal in the target region non-invasively by radiating ~~the~~ a sound signal from a sound emitter, which is not a single sinusoidal pressure-time signal, ~~in response to a pressure-time signal~~ such that a pressure-time course of ~~the~~ said sound ~~signals~~ signal in the target region is non-sinusoidal and such that a magnitude of ~~the~~ a pressure amplitude of ~~the~~ said sound signal in the target region is larger than ~~the~~ an expansion amplitude of ~~the~~ said sound signal in the target region;[[,]] ~~wherein the pressure-time signal is not a single sinusoidal pressure-time signal~~[[;]] and

adapting the pressure-time signal ~~such that the pressure-time course of the sound signals in the target region is adapted to a specific~~ by utilization of ~~the~~ non-linear propagation and attenuation properties of the body of material ~~in the target region~~ such that the non-invasively produced local temperature increase in the target region of the body of material produced by the adapted pressure-time signal is greater than a temperature increase produced by [[a]] an emitted single sinusoidal pressure-time signal having the acoustical same power.

18. (Previously Presented) The method of claim 17, wherein the pressure-time course of the sound signal radiated from the sound emitter includes several superimposed mono-frequency signals.

19. (Previously Presented) The method of claim 17, wherein the pressure-time course of the sound signal radiated from the sound emitter includes asymmetrical sound signals.

20. (Previously Presented) The method of claim 17, wherein the pressure-time course of the sound signal radiated from the sound emitter includes frequency-modulated chirp signals.

21. (Previously Presented) The method of claim 17, wherein the pressure-time course of the sound signal radiated from the sound emitter includes asymmetrical sound signals superimposed with at least one mono-frequency signal.

22. (Previously Presented) The method of claim 17, wherein the time-pressure course of the sound signal radiated from the sound emitter includes frequency-modulated chirp signals superimposed with at least one mono-frequency signal.

23. (Previously Presented) The method of claim 17, wherein the step of generating is effected on biological materials containing the target region.

24. (Previously Presented) The method of claim 17, wherein the step of generating is effected on one of technical and industrial materials containing the target region.

25. (Previously Presented) The method of claim 17, wherein said step of generating comprises effecting an extra-corporal treatment on living beings containing the target region.

26. (Previously Presented) The method of claim 17, wherein said step of generating includes effecting a minimal evasive treatment on living beings containing the target region.

27. (Previously Presented) The method of claim 17, wherein said step of generating comprises focusing the sound signal using a self-focusing arrangement.

28. (Previously Presented) The method of claim 17, wherein said step of generating comprises focusing the sound signal using a reflector-focusing arrangement.

29. (Previously Presented) The method of claim 17, wherein said step of generating comprises focusing the sound signal using a lens-focusing arrangement.

30. (Previously Presented) The method of claim 17, wherein said step of generating comprises producing a pressure-time course in the target region using a piezoelectric emitter equipped with piezoceramics with natural resonances which differ from one another, for producing at least two different sound signals acting simultaneously in the target region.

31. (Previously Presented) The method of claim 17, wherein said step of generating comprises producing the pressure-time course in the target region using a piezoelectric emitter having at least two zones for producing at least two different sound signals acting simultaneously in the target region.

32. (Previously Presented) The method of claim 17, further comprising the step of providing an ultrasound image using a picture-providing method.

33. (Previously Presented) The method of claim 17, wherein the sound emitter is entirely outside the body of material during the step of generating and adapting.